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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,989	07/09/2001	Slyvain S. Hantzer	JHT-0003	4549

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EXAMINER

ARNOLD JR, JAMES

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 06/06/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,989

Applicant(s)

HANTZER ET AL.

Examiner

James Arnold, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Examiner acknowledges receipt of the abstract of disclosure required under 37 CFR 1.72(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-12 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawyer (ep-0 419 266) in view of Velenyi (USPN 4,808,563).

The Sawyer reference discloses a hydroprocessing process whereby a feedstock is passed to a hydrotreating zone containing at least one hydrotreating reactor containing a hydrotreating catalyst. See Abstract. Sawyer discloses a process whereby a feedstock is hydrotreated in the presence of a hydrotreating catalyst under hydrotreating conditions wherein the hydrotreating catalyst comprises a non-noble Group VIII metal molybdate. See Page 4 lines 19-24. Sawyer

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discloses a process whereby a feedstock is hydrotreated in the presence of the first hydrotreating catalyst under first hydrotreating conditions wherein the first hydrotreating catalyst comprises at least one Group VIB and at least one non-noble Group VIII metal on a refractory oxide support to produce a first hydrotreated feedstock. See page 4, lines 19-25. Sawyer discloses the use of non-noble metals nickel and cobalt in the hydroprocessing process. See page 4, lines 19-25. Sawyer discloses hydrotreating conditions equivalent to the range of 288 C to 371 C, pressure in the range of 300 to 1200 psig, liquid hourly space velocity in the range of 0.5 to 4.0, and a hydrogen treat gas rate in the range of 200 to 2000 SCF/B. See page 5 lines 32-40.

The Sawyer reference does not disclose a process wherein the hydrotreating catalyst comprises a bulk metal catalyst comprising at least one non-noble Group VIII metal and two Group VIB metals and wherein said bulk metal catalyst comprises a non-noble Group VIII metal molybdate in which at least a portion but less than all of molybdenum is replaced by tungsten to produce a hydrotreated feedstock. The Sawyer reference does not disclose fractionating the hydrotreated feedstock. The reference does not disclose passing at least a portion of the first hydrotreated feedstock to a second hydrotreating zone containing at least one hydrotreating reactor containing a second hydrotreating catalyst and hydrotreating the first hydrotreated feedstock in the second hydrotreating zone under second hydrotreating conditions. The reference does not disclose fractionating the second hydrotreated feedstock nor does it disclose fractionating the hydrotreated feedstock to produce a first basestock. The reference does not disclose a bulk metal catalyst represented by the formula $(X)_b(Mo)_c(W)_dO_z$ wherein x is a non-noble Group VIII metal, the molar ratio of $b:(c+d)$ is 0.5/1 to 3/1, the molar ratio of $c:d$ is $>0.01/1$, and $z=[2b + 6(c+d)]/2$. The reference does not disclose a process wherein the molar

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ratio of $b:(c+d)$ is 0.75/1 to 1.5/1. The reference does not disclose a process wherein the molar ratio of $b:(c+d)$ is 0.75/1 to 1.25/1. The reference does not disclose a process wherein the molar ratio of $c:d$ is $>0.1/1$. The reference does not disclose a process wherein the molar ratio of $c:d$ is 1/10 to 10/1. The reference does not disclose a process wherein the molar ratio of $c:d$ is 1/3 to 3/1. The reference does not disclose a process wherein the petroleum oil is a white oil. The reference does not disclose a process wherein the white oil is a technical or medicinal white oil. The Sawyer reference does not include the complete range of hydrotreating conditions disclosed by the application for the items of temperature, pressure, liquid hourly space velocity, and hydrogen treat gas rates.

The Velenyi reference discloses a bulk metal catalyst represented by the formula $Mo_aW_bM_cA_dO_e$. See Abstract.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process wherein the hydrotreating catalyst comprises a bulk metal catalyst comprising at least one non-noble Group VIII metal and two Group VIB metals and wherein said bulk metal catalyst comprises a non-noble Group VIII metal molybdate in which at least a portion but less than all of molybdenum is replaced by tungsten to produce a hydrotreated feedstock because as transition metals both molybdenum and tungsten have similar properties and because both are utilized in the bulk metal catalyst and since combinations of Group VIII and Group VIB metals are disclosed by Velenyi and Sawyer it would be appropriate to use them in any ratio or combination effective for hydrotreating.. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process whereby the hydrotreated feedstock is fractionated, the second hydrotreated feedstock is

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fractionated, and a hydrotreated feedstock is fractionated to produce a first basestock because fractionation allows for further hydrotreating by promoting separation of the hydrocarbon feedstock components. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process whereby at least a portion of the first hydrotreated feedstock is passed to a second hydrotreating zone containing at least one hydrotreating reactor containing a second hydrotreating catalyst and the first hydrotreated feedstock is hydrotreated in the second hydrotreating zone under second hydrotreating conditions because further hydrotreating enhances the chances of generating a sufficiently saturated product. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process wherein the bulk metal catalyst is represented by the formula $(X)_b(Mo)_c(W)_dO_z$ wherein x is a non-noble Group VIII metal, the molar ratio of b:(c+d) is 0.5/1 to 3/1, the molar ratio of c:d is $>0.01/1$, and $z=[2b + 6(c+d)]/2$ because all the constituent components of the bulk metal catalyst are disclosed by the Velenyi reference and it would be appropriate to use them in any combination effective for hydrotreating. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process wherein the molar ratio of b:(cod) is 0.75/1 to 1.5/1 or 0.75/1 to 1.25/1 because all the constituent components of the bulk metal catalyst are disclosed by the Velenyi reference and it would be appropriate to use them in any combination effective for hydrotreating. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process wherein the molar ratio of cod is $>0.1/1$, 1.10 to 10/1, or 1/3 to 3/1 because all the constituent components of the bulk metal catalyst are disclosed by the Velenyi reference and it would be appropriate to use them in any combination effective for hydrotreating. It would have

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been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process wherein the petroleum oil is a white oil, technical or medicinal, because of the high degree of saturation associated with white oil. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process whereby the complete range of hydrotreating conditions disclosed by the application for the items of temperature, pressure, liquid hourly space velocity, and hydrogen treat gas rates are utilized because there is significant overlap between the numerical values disclosed for the hydrotreating conditions in the Sawyer reference and the numerical values disclosed for the hydrotreating conditions in the application and it would be appropriate to adjust the values in whatever way necessary to promote effective hydrotreating.

Claim 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawyer (ep-0 419 266) in view of Velenyi (USPN 4,808,563) as applied to claim 1-12 and 16-19 above, and further in view of George A. Olah, Hydrocarbon Chemistry, 1995.

The Olah reference discloses hydrotreating temperatures in the range of 270 to 450 C and a pressure of 80-200 atm (1175 psig to 2939 psig). See page 30.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize Olah's hydrotreating temperatures in the range of 270 to 450 C and pressure in the range of 80-200 atm (1175 psig to 2939 psig) because there is significant overlap between the numerical values disclosed for the hydrotreating conditions in the Olah reference and the numerical values disclosed for the hydrotreating conditions in the application and it would be appropriate to adjust the values in whatever way necessary to promote effective hydrotreating.

Response to Arguments

Applicant's arguments have been fully considered but are deemed unpersuasive. Applicant asserts that none of the cited references describe the use of the inventive Ni-Mo-W catalyst combination. The individual components of this catalyst combination, however, are described by the cited references as being suitable for hydrotreating. See Sawyer, page 4, lines 19-27 and Velenyi, Abstract. Therefore, combining the individual components, known for their use and effectiveness in hydrotreating, to create applicant's claimed catalyst combination would be obvious to one having ordinary skill in the art. Applicant also asserts the novelty of a catalyst combination comprising two Group VI and one Group VIII component. This, however, is also an inaccurate assertion because Velenyi discloses that two or more of the Group VIII and Group VI metal components may be combined in its disclosed catalyst. See Abstract. Finally, applicant asserts that his catalyst combination results in unexpectedly high activity. Applicant, however, fails to particularly point out in his response how the combination of Ni, Mo, and W results in unexpectedly high activity. Therefore, the Examiner maintains that the teachings in the Sawyer and Velenyi references would suggest to one of ordinary skill in the art the process as claimed by applicant.

Conclusion

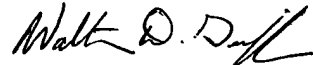
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Arnold, Jr. whose telephone number is 703-305-5308. The examiner can normally be reached on Monday-Thursday 8:30 AM-6:00 PM; Fridays from 8:30 AM-5:00 PM with alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

ja
June 5, 2003


Walter D. Griffin
Primary Examiner